ENERGY SECURITY

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Innovations in State Policy

Is Your State Prepared for an Energy Emergency?

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The U.S. energy infrastructure is a complex network of pipelines, refineries, storage facilities, power plants, transmission lines and more. (The appendix contains a list of the critical energy infrastructure assets for the electricity, petroleum, and natural gas sectors.) Protecting that infrastructure from natural disaster or terrorist attack is daunting. How do state policymakers know that, when a hurricane hits, the hospitals will have enough backup power to keep the lights on? The possibility also exists that an emergency could occur due to a severe fuel disruption or shortage. What mechanisms are in place to keep a shortage from becoming a disaster?

State agencies and organizations work to improve the nation's energy security by conducting emergency exercises, developing energy emergency plans, and communicating regularly with other state agencies. All these actions contribute to a more secure energy system. However, how can policymakers be certain that the state is doing everything in its power to lessen the damage associated with an energy crisis? How do policymakers know if their state is prepared to manage an energy emergency?

Legislators can use the questions below to help determine how well prepared their state is for an energy emergency. Ask the questions of the state energy office, public utility commission, emergency management agency, public sector or other state entities that are involved in energy security planning and response. Keep in mind that each state approaches energy security differently. Energy emergency planning and response will vary based upon the state's energy infrastructure and governmental structure. The level of involvement of each state agency and the various state stakeholders also will differ. This document focuses on the emergency management function specific to energy-related emergencies.

Most responses to the questions should be "yes," although specific responses will vary by state. One state agency may not be able to provide a complete answer to each question. It may be necessary to contact stakeholders throughout the state to gather a comprehensive response to these questions. Provided as part of this document are website links to national contact lists for each of the agencies in your state, as well as other relevant contacts. The commentary below each question offers a descriptive explanation of *why* to ask the question and *what* the response might include. The responses will offer legislators a qualitative and quantitative assessment of the state's energy security status and provide a measure of the state's preparedness. The four areas of assessment include:

- Authorities,
- Energy emergency or security plan,
- Communication and coordination, and
- Interdependencies and vulnerabilities.

Authorities

Defined legal authority manages government intervention during an emergency. Some states depend on the emergency management agency for energy emergency planning and response. Others may direct energy emergency responsibilities to some or all of several agencies that might be involved. Clearly defined roles and responsibilities for all state agencies are necessary to ensure coordination and order during an emergency.

1. **Does each state agency have adequate authorization to deal with protecting the state's critical energy infrastructure? Does the agency have adequate authority to deal with energy emergencies?**

   The state's energy emergency plan identifies the authorities for protecting critical energy infrastructure and responding to energy emergencies. The plan will authorize certain agencies to perform specific actions during an emergency.

2. **Which state agency takes the lead in the event of an emergency?**

   Often, the lead agency in an energy emergency will depend upon the severity and nature of the emergency. In most cases, the local first responders, such as firefighters and police officers, will be first on the scene. The emergency management agency will take a lead role, if necessary. The state energy office or public utility commission might be involved if natural gas, petroleum or electricity sectors are affected by the emergency. The state's homeland security office will be involved if terrorism is suspected.

Energy Emergency or Security Plan

An energy emergency or energy security plan will outline the protocols for an emergency event. An overview of the plan normally provides information about of the state's energy use—production and consumption, imports and exports. An energy emergency plan directs the actions of the energy-related state government entities during an energy emergency. It organizes planning and response mechanisms, outlines stakeholder coordination, and identifies planning response strategies and fuel-related response measures.

1. **Is there a state energy emergency plan?**

   The U.S. Department of Energy's State Energy Program, which provides funding to each state annually on a formula basis, requires a state energy emergency plan, although the quality of these plans is variable. Each state should have an energy emergency plan, which may or may not be integrated into the state's overall emergency management plan.

2. **How often is the plan updated or reviewed?**

   States often review their energy emergency plans annually and update them every two to four years. Ideally, plan reviews occur annually, and updates take place as necessary. Reviews and updates guarantee that the plan is current.

3. **Does the plan clearly describe the responsibilities of each agency?**

   Each state agency can provide input about its capabilities and responsibilities during an emergency if it is involved in the development and review of the plan. When defining responsibilities, most plans involve the public and private energy-related entities in the state. The state energy office usually will take the lead on a petroleum and natural gas shortage, disruption or emergency. Natural gas may fall under the public utility commission, which deals with electricity-related emergencies, usually with the utilities as the lead. The emergency management agency is most likely involved from the onset of the emergency. State homeland security will intervene in the case of terrorist events.

4. **Is the plan flexible enough to deal with various types of emergencies?**

   Each emergency is different. A flexible—or guiding—plan will allow the state to design a framework that addresses the authorities and responsibilities and that will be useful in many situations. A flexible plan does not address every emergency that could occur; it outlines steps and offers options for various scenarios.

5. **Is funding adequate to review and update the plan?**

   Some states each year authorize a certain amount of funding to the state agency responsible for updating the energy emergency plan. Determine the level of funding and any activities that need to occur, such as emergency exercises or vulnerability assessments, for the state to be better prepared. The cost and labor associated with the development of an energy emergency plan varies from state to state. North Carolina's latest plan was prepared for $35,000 with modest staff input (one full-time employee commits 5 percent of her time to this issue). In comparison, two full-time employees in the California Energy Commission are dedicated to working full time on energy emergency preparedness in the state. The California plan cost about $150,000 with consultant and staff involvement.

6. **Are any strategies in place in the state to possibly lessen the damage from an attack (for example, distributed generation, energy efficiency, renewable energy)?**
   Energy efficiency can decrease load on the system. Distributed generation is important to maintain local electricity if a major power line goes down. Renewable energy diversifies fuel sources, decreasing dependence on natural gas and other fossil fuels. State energy offices or utilities may participate in the promotion of energy efficiency and renewable activities throughout the state. Examples of these actions include a state law in New York, Executive Order 111, which requires state agencies and authorities to reduce energy consumption by 35 percent by 2010 relative to 1990 levels. Demand-side management (DSM)—the planning, implementing, and monitoring activities of electric utilities—is designed to encourage consumers to modify their level and pattern of electricity use. Some utilities use renewable generation as a means for power production.

7. **Is there appropriate documentation and record of the plan?**

   A hard copy of the plan should be in the hands of multiple people in multiple state energy-related agencies and organizations. Some states choose to provide access to the

plan online. In some cases, state employees have a historical knowledge of the energy emergency issues, including the authorities and responsibilities during an emergency, but this information is not recorded anywhere. It is essential for more than one person to have access to the plan.

8. **Are agencies with certain expertise in energy emergency-related issues involved in the development and review of the plan?**

   The development and review of the energy emergency plan should involve the expertise of the agencies that work daily on energy-related issues. Their knowledge of the energy infrastructure, trends and energy profile makes their input valuable. Government should work with industry experts from the oil, electricity, natural gas, propane and other critical infrastructure sectors to develop a comprehensive plan.

Communication and Coordination

A key component of energy emergency preparedness is knowing who to contact and when. Because there are several major stakeholders in the energy planning and response process, a lack of communication can lead to a costly duplication of efforts and poor response to emergencies. Regular contact among the stakeholders is essential. The following are questions that a legislator may ask in order to assess the state's energy emergency communication and coordination.

1. **Are industry representatives from, for example, utilities and the private sector, consistently involved in activities such as energy emergency exercises or regular conference calls with other state energy stakeholders?**

   Industry representatives can assist state emergency responders by explaining their operation's security process and practices. Depending on the severity of a shortage, industry measures often can be sufficient to protect against a full-fledged emergency.

2. **Do state stakeholders meet regularly (weekly, monthly, semi-annually) via conference call, in-person meeting or other means to discuss energy emergency preparedness and response?**

   Regular communication among state stakeholders will ensure that all are aware of necessary preparedness actions and the response in the event of an emergency. The first time that stakeholders meet should not be during an emergency.

3. **Does coordination occur with surrounding states through regular status updates on fuel supply/demand and regional energy emergency exercises?**

   Communication within the region allows states to coordinate emergency response. In addition, much of the energy infrastructure crosses state lines; outages in one state can quickly cascade to another, as seen in the eastern blackout in August 2003.

4. **Is the federal government involved in the state and regional communication efforts, including energy emergency sector updates and exercises?**

   The federal government, especially the Department of Energy (DOE), offers a national

view of the fuel situation. The Office of Electricity Reliability and Energy Reliability might be specifically involved with electricity infrastructure and reliability issues. The Energy Information Administration provides helpful long-term analysis and information.

The Department of Homeland Security ensures that emergency response professionals are prepared for any situation and provides a coordinated, comprehensive federal response to any large-scale crisis.

5. **Is there a regularly updated hard copy/paper version of a contact list for an energy emergency that includes all energy sector stakeholders?**

   For example, a contact list should include contacts from the governor's office, energy and emergency-related state agencies, utilities, the private sector, the federal government, and energy emergency assurance coordinators through the DOE. If the power goes out, an online or electronic list of contacts is useless. A hard copy will ensure that stakeholders still can be reached if the power goes out. Someone should be assigned to regularly update that contact list. Several people and agencies should have access to the list.

6. **Is a report prepared of state energy supply, demand and prices? How often? Who authors that report?**

   In some states, the state energy office monitors petroleum and natural gas and the public utility commission supervises electricity. In other states, natural gas falls under the purview of the public utility commission. Whatever the case, it is important to observe and report on the energy profile—or the fuels that make up the state's supply, consumption, imports and exports. This will alert the state to potential shortages, disruptions or emergencies.

7. **Is the state's homeland security office involved in energy emergency planning and coordination?**

   The state's homeland security office needs notice of emergency activities that occur in the state to avoid duplication of efforts. Homeland security efforts deal mainly with terrorist attacks within the state, reduce vulnerability to terrorism, minimize the damage, and assist with recovery from attacks.

8. **Are state agencies with certain energy expertise involved in the state's overall emergency planning and response process?**

   The state's energy office and public utility commission track the state's energy supply and demand and may be able to determine whether a shortage or disruption, or even an emergency, might arise. The state energy office and public utility commission may add elements to the state's overall emergency planning and response that have not been considered by the emergency management agency and homeland security office.

Interdependencies and Vulnerabilities

The United States has 3,000 power plants, more than 3,000 reservoirs and municipal wastewater facilities, and 2 million miles of oil and natural gas pipelines. Each of these interconnected systems relies on the functions of the others. For example, water supply and purification facilities cannot operate when the power goes out. Conducting a vulnerability assessment will identify the critical assets, assess the threats, examine policies and procedures, and analyze the consequences of damage to any of these critical assets. These interdependency and vulnerability assessments raise a security issue because terrorists could use them to plan attacks on the most vulnerable assets. It is important that the necessary and proper expertise be involved in such discussions and that the most sensitive information be disclosed only to those who need to know it. Ask state agencies the following questions to ensure that interdependency and vulnerability issues are addressed.

1. **Are the energy system dependencies of other critical sectors (i.e., telecommunications, water, medical care facilities, emergency services, etc.) being considered as part of energy emergency scenarios?**
   Addressing the interdependencies within the energy system and in the surrounding sectors can prevent unnecessary failures.

2. **Is a state agency involved in or responsible for determining the interdependencies within the energy system?**

   As mentioned previously, interdependencies on the energy system can go beyond the energy system—many other sectors rely on energy. It is imperative to consider the interdependencies within the energy system as well as dependencies of other sectors on the energy system, and vice versa.

   In some states, the state energy office and public utility commission will lead a study of interdependencies. In other cases, it is the responsibility of the emergency management agency or homeland security agency to address the interdependencies. Other entities, such as the National Guard, may conduct the assessment. Interdependency assessments should be coordinated throughout the state to include all fundamental sectors and expertise.

3. **Has a vulnerability assessment been conducted of the critical energy infrastructure? Who leads the vulnerability assessment process? Are the state agencies with certain energy expertise involved in completing the vulnerability assessment?**

   A vulnerability assessment should be conducted, but the agency that conducts the assessment may differ. Public utility commissions and state energy offices will sometimes carry out vulnerability assessments related solely to the energy infrastructure. In some states, the vulnerability assessment involves more than just the energy sector and may be performed by the emergency management agency or homeland security office. The private sector also may conduct vulnerability assessments. It is important to use the proper expertise for each sector. In Colorado, the National Guard conducted the vulnerability study in coordination with the emergency management agency.

Appendix. Segments of the Energy Sector

Electricity	Petroleum	Natural Gas
• Generation – Fossil fuel power plants Coal Gas Oil – Nuclear power plants – Hydroelectric dams – Renewable energy • Transmission – Substations – Lines – Control Centers • Distribution – Lines – Substations • Control Systems • Electricity Markets	• Crude Oil – On-shore fields – Off-shore fields – Import marine terminals – Transport – Storage • Petroleum Processing Facilities – Refineries – Import marine terminals – Transport – Storage • Control Systems • Petroleum Markets	• Production – On-shore fields – Off-shore fields • Processing • Transmission (pipelines) • Distribution (pipelines) • Storage • LNG Facilities • Control Systems • Gas Markets

Resources

National Association of State Energy Officials (NASEO)
NASEO is a membership organization for the directors of each state energy office.
http://www.naseo.org/members/states.htm

National Association of Regulatory Utility Commissioners (NARUC)
NARUC members include the governmental agencies that are engaged in the regulation of utilities and carriers in the U.S.
http://www.naruc.org/displaycommon.cfm?an=15

National Emergency Management Association (NEMA)
NEMA is the organization of state emergency management officials.
http://www.nemaweb.org/State_Contacts/index.cfm

State Homeland Security Contacts
http://www.whitehouse.gov/homeland/contactmap.html

Federal Emergency Management Agency
www.fema.gov

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